

## REMARKS

Claims in the case are 1, 4, 5 and 9, upon entry of this amendment. Claims 1, 4 and 9 have been amended, and Claim 2 has been cancelled without prejudice herein. No Claims have been added herein. Claims 3 and 6-8 were cancelled without prejudice previous to the present amendment.

Claim 1 has been amended for purposes of clarity by including indentation and rearranging terms. In addition, Claim 1 has been amended to include a description of the method by which a coating of the claimed dispersion is prepared, and the method by which the resistivity of the coating is measured. Basis for this amendment to Claim 1 is found at page 6, line 22 through page 7, line 12 of the specification.

Claim 1 has also been amended to include the subject matter of Claim 2 therein. Accordingly, Claim 2 has been cancelled herein. Claim 1 has been further amended to remove recitations of the term "about."

Claim 4 has been amended for purposes of form, by deleting the recitation as to a preferred range, and to include Markush language where appropriate. Claim 9 has been amended to begin with a definite article, rather than an indefinite article.

The specification has been amended to include cross reference information relative to the related German parent Patent Application, and to place section headings in a more proper form (e.g., "SUMMARY" being replaced with --SUMMARY OF THE INVENTION--).

Pages 6, 10 and 11 of the specification have been amended to address improper incorporations by reference relative to EP-A 991 303, in accordance with MPEP § 608.01(p). Basis for the amendment to the paragraph at page 6, lines 20-21 of the specification is found at paragraph [0026] of EP 0 991 303 A1, and at column 3, line 64 through column 4, line 3 of United States Patent No. 6,391,481 B1 (the '481 Patent). The '481 Patent is an English language equivalent of EP 0 991 303 A1. In addition, the '481 Patent and EP 0 991 303 A1 both claim priority to the same German parent Patent Application, i.e., DE 198 41 803.

Basis for the amendment to the paragraph at page 10, lines 3-9 of the specification is found at Beispiel 2 of EP 0 991 303 A1, and in Example 2 at column 5, lines 10-29 of the '481 Patent. The paragraphs at page 10, lines 18-27 of the

specification and at page 11, lines 5 through 14 of the specification have been amended to reference the method now described in Example 1.

The amendments to pages 6, 10 and 11 of the specification are not deemed to represent the entry of new matter into the case, as they have been undertaken in accordance with MPEP § 608.01(p) for purposes of curing an improper incorporation of essential matter by reference to EP-A 991 303, which is a published foreign language patent application. In further accordance with MPEP § 608.01(p), a declaration is included in Appendix-(I) herewith, which has been executed by one of the inventors, and which states that the amendments to pages 6, 10 and 11 of the specification consists of the same material incorporated by reference in the referencing application. Entry of the amendments to pages 6, 10 and 11 of the specification is respectfully requested.

The specification stands objected to relative to an improper incorporation by reference to EP-A 991 303, which is in a language other than English. This objection is respectfully traversed in light of the amendments herein and the following remarks.

The specification, in particular at pages 6, 10 and 11, has been amended herein in accordance with MPEP § 608.01(p) to include essential material incorporated by reference to EP-A 991 303. In further accordance with MPEP § 608.01(p), a declaration is included in Appendix-(I) herewith, which has been executed by one of the inventors, and which states that the amendments to pages 6, 10 and 11 of the specification consists of the same material incorporated by reference in the referencing application.

In light of the amendments herein and the preceding remarks, the objection to the specification is deemed to have been fully addressed. Reconsideration and withdrawal of the present objection to the specification is respectfully requested.

Claims 1, 2, 4, 5 and 9 stand rejected under 35 U.S.C. § 112, first paragraph. This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

The specification, in particular at pages 6, 10 and 11, has been amended herein in accordance with MPEP § 608.01(p) to include essential material incorporated by reference to EP-A 991 303. In further accordance with MPEP §

608.01(p), a declaration is included in Appendix-(I) herewith, which has been executed by one of the inventors, and which states that the amendments to pages 6, 10 and 11 of the specification consists of the same material incorporated by reference in the referencing application.

As presently amended the specification is deemed to provide sufficient support for the claims with regard to the method of making the claimed dispersion.

In light of the amendments herein and the preceding remarks, Applicants' present specification is deemed to provide a written description of the invention and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use the same. Reconsideration and withdrawal of the present rejection is respectfully requested.

Claims 1, 2, 4, 5 and 9 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Claim 1 has been amended herein to include a description of the method by which a coating of the claimed dispersion is prepared, and the method by which the resistivity of the coating is measured. Basis for this amendment to Claim 1 is found at page 6, line 22 through page 7, line 12 of the specification.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to particularly point out and distinctly claim the subject matter which they regard as their invention. Reconsideration and withdrawal of the present rejection is respectfully requested.

Applicants wish to point out that the term "resistivity" as used in their claims is independent of the thickness of the coating sample from which the resistivity measurement is made. Attention is directed to Appendix-(II) herein which includes a copy of DIN EN ISO 3915, *Measurement of resistivity of conductive plastics*.

Claims 1, 2, 4, 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,632,471 B2 (**Louwet et al**) in view of DE 198 41 803 A1. This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Reference to DE 198 41 803 A1 will be made herein to United States Patent No. 6,391,481 B1, which is an English language equivalent thereof (collectively, **Jonas et al**).

Louwet et al discloses a redispersible or soluble material that is obtained by freeze drying an aqueous dispersion of a latex that includes a polyanion and a polythiophene, e.g., polystyrene sulphonate (PSS) and poly(3,4-ethylenedioxythiophene) (PEDOT). See the abstract and column 12, lines 58-59 of Louwet et al.

Louwet et al discloses dispersions having 90 weight percent of particles having sizes of less than 58 nm. See column 13, Table-1 of Louwet et al.

Louwet et al disclose their dispersions as having a mean particle size of about 50 nm (column 13, lines 61-65).

Jonas et al discloses an electroluminescent assembly that includes, as a hole injection layer, a polymeric organic conductor that is applied from a dispersion that contains particles having a [mean] particle size of less than 1  $\mu\text{m}$  (1000 nm). See the abstract, and column 2, lines 19-24 of Jonas et al. Jonas et al disclose that the dispersion may include 3,4-polyethylenedioxythiophene (PEDOT) and polystyrenesulfonate (PSS). See column 4, lines 56-57 of Jonas et al.

Louwet et al disclose aqueous dispersions of polythiophene and polyanion having a mean particle size of about 50 nm. Jonas et al disclose dispersion of polymeric organic conductor, such as PEDOT and PSS, that have a mean particle size of less than 1000 nm or less than 250 nm. The mean particle size of the dispersions of Louwet et al are 5 times smaller than the lowest disclosed mean particle size disclosed by Jonas et al.

In light of the disparity in disclosed mean particle size between Louwet et al and Jonas et al, a skilled artisan would not be motivated to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed dispersions. As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are: (1) the nature of the problem to be solved; (2) the teaching of the prior art; and (3) the knowledge of persons of ordinary skill in the art.

*In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The nature of the

problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

Louwet et al and Jonas et al either alone or in combination, do not disclose, teach or suggest Applicants' presently claimed dispersions. More particularly, Louwet et al and Jonas et al, either alone or in combination do not disclose, teach or suggest an aqueous dispersion of polyanion of cationic 3,4-polyalkylenedioxythiophene, in which 90 percent by weight of the particles of the dispersion have sizes of less than 40 nm, and which provides a coating having a resistivity of at least 5000  $\Omega\text{cm}$ .

It is respectfully submitted that the rejection impermissibly uses Applicants' application as a blueprint for selecting and combining or modifying the cited references to arrive at Applicants' claimed invention, thereby making use of prohibited hindsight in the selection and application of that prior art. The use of hindsight reconstruction of an invention is an inappropriate process by which to determine patentability, *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998), at 1457. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Applicants wish to point out that Claim 1 has been amended to replace "about 90%" with --90%--. In addition, the recitation as to "about 40 nm" of Claim 2 has been incorporated into Claim 1 by amendment herein without the prefaced term "about." As such, and in accordance with the comments in the last full paragraph on page 5 of the Office Action of 29 December 2004, the disclosure of Louwet et al is not deemed to read on Applicants' present claims.

Applicants wish to counter the assertions made in the first full paragraph on page 6 of the Office Action of 29 December 2004, regarding Louwet et al providing disclosure that would motivate a skilled artisan to vary the degree of homogenization and microfluidization to arrive at Applicants' presently claimed dispersion.

Louwet et al disclose passing a dispersion twice through a homogenizer and then

once through a microfluidizer (column 17, lines 1-16), but provide no disclosure or suggestion that such a treatment would result in a dispersion in which 90% of the particles thereof have a size of less than 40 nm.

Applicants wish to further counter assertions made in the second full paragraph on page 7 of the Office Action of 29 December 2004. Applicants submit that smaller particle size would not be viewed by a skilled artisan as necessarily resulting in increased particle packing at the coating surface or increased dispersion homogeneity. As is known to the skilled artisan, due in part to the increase in surface area, particles having smaller sizes can be prone to repulsive inter-particle forces that diminish the degree of particle packing at the coating surface. In addition, due in part to the increase in surface area, particles having smaller sizes are also prone to aggregation, which can result in both a decrease in dispersion homogeneity (and stability) and a decrease in packing of particles at the coating surface, due, for example, to irregularly shaped particles and particles of varying average size (which do not readily pack well).

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Louwet et al in view of Jonas et al. Reconsideration and withdrawal of the present rejection is respectfully requested.

Claims 1, 2, 4, 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jonas et al in view United States Patent No. 5,370,981 (**Krafft et al**). This rejection is respectfully traversed in light of the amendments herein and the following remarks.

As discussed previously herein, Jonas et al disclose an electroluminescent assembly that includes, as a hole injection layer, a polymeric organic conductor that is applied from a dispersion that contains particles having a [mean] particle size of less than 1  $\mu\text{m}$  (1000 nm). Jonas et al disclose that the dispersion may include 3,4-polyethylenedioxythiophene (PEDOT) and polystyrenesulfonate (PSS).

Krafft et al disclose antistatic plastic articles that include an antistatic layer near the surface thereof that is formed from a polythiophene dispersion having a particle size of 5 to 100 nm. See the abstract, column 3, lines 11-19, and column 11, lines 30-39 of Krafft et al. Krafft et al provides no disclosure or suggestion with

regard to what the particle size of 90% of the particles of their dispersion are.

Krafft et al provides no disclosure or suggestion with regard to 90% of the particles of the dispersion having sizes of less than 40 nm.

The polythiophene dispersions of Krafft et al are used to prepare an antistatic layer of an antistatic plastic article. The antistatic polythiophene layers of Krafft et al would not be suitable for use as the hole injection layer of the electroluminescent assemblies of Jonas et al, as would be recognized by a skilled artisan. As such, neither Jonas et al nor Krafft et al provide the requisite disclosure that would motivate skilled artisan to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed dispersions.

Jonas et al and Krafft et al, either alone or in combination do not disclose, teach or suggest Applicants' presently claimed dispersion. More particularly, Jonas et al and Krafft et al, either alone or in combination do not disclose, teach or suggest an aqueous dispersion of polyanion of cationic 3,4-polyalkylenedioxythiophene, in which 90 percent by weight of the particles of the dispersion have sizes of less than 40 nm, and which provides a coating having a resistivity of at least 5000  $\Omega\text{cm}$ .

Applicants wish to counter the assertions made in the last full paragraph on page 8, and in the in the first full paragraph on page 9 of the Office Action. Applicants submit that smaller particle size would not be viewed by a skilled artisan as necessarily resulting in increased particle packing at the coating surface or increased dispersion homogeneity. As is known to the skilled artisan, due in part to the increase in surface area, particles having smaller sizes can be prone to repulsive inter-particle forces that diminish the degree of particle packing at the coating surface. In addition, due in part to the increase in surface area, particles having smaller sizes are also prone to aggregation, which can result in both a decrease in dispersion homogeneity (and stability) and a decrease in packing of particles at the coating surface, due, for example, to irregularly shaped particles and particles of varying average size (which do not readily pack well).

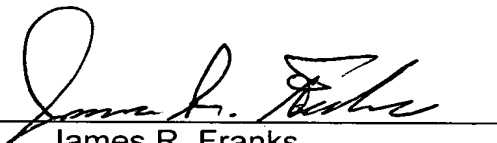
Regarding the remarks made in the third full paragraph on page 9 of the Office Action, Applicants respectfully submit that in light of the amendments to the

specification and claims herein, a sufficient nexus between the dispersions of their claims and the resistivity of coatings prepared there-from has been provided.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Jonas et al in view of Krafft et al. Reconsideration and withdrawal of the present rejection is respectfully requested.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. § 112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the objections and rejections, and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

By   
James R. Franks  
Agent for Applicants  
Reg. No. 42,552

Bayer MaterialScience LLC  
100 Bayer Road  
Pittsburgh, Pennsylvania 15205-9741  
(412) 777-3808  
FACSIMILE PHONE NUMBER:  
(412) 777-3902

f:\shared\kpl\jrf123.ame





**APPENDIX-(I)**

Declaration relative to amendments made herein to cure an improper incorporation  
by reference.



#### **APPENDIX-(II)**

Copy of DIN EN ISO 3915, *Measurement of resistivity of conductive plastics.*